IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ADVANCED MICRO DEVICES, INC. and AMD INTERNATIONAL SALES & SERVICE, LTD., Plaintiffs, v. INTEL CORPORATION and INTEL KABUSHIKI KAISHA, Defendants.	C. A. No. 05-441 (JJF) PUBLIC VERSION
IN RE: INTEL CORP. MICROPROCESSOR ANTITRUST LITIGATION	MDL Docket No. 05-1717 (JJF)
PHIL PAUL, on behalf of himself and all others similarly situated, Plaintiffs, v. INTEL CORPORATION, Defendant.	C.A. No. 05-485-JJF (DM4A) CONSOLIDATED ACTION

DECLARATION OF JOHN ASHLEY

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Dated: July 2, 2008

Public Version Dated: July 2, 2008

DECLARATION OF JOHN F. ASHLEY

I, John F. Ashley, declare and state as follows:

1. I am currently employed as the Executive Vice President of Electronic Evidence at First Advantage Litigation Consulting ("FADV"), 45240 Business Court, Suite 300, Sterling, Virginia 20166.

2. FADV is an electronic discovery and computer forensics consulting firm that assists clients with fact finding in litigation, regulatory reviews, and business decisions.

3. Before working with FADV, I was the head of the Greater Manchester Police Department's Computer Examination Unit, which at that time was the largest criminal computer forensics and electronic disclosure unit in Europe. In that position, I was responsible for all computer examinations and electronic disclosure matters in Manchester, England, North Wales, and the Isle of Man. On several occasions, I was called on to assist Scotland Yard with computer forensic investigations. I have been dedicated to the field of computer forensics, electronic disclosure and electronic discovery since 1989.

4. I have been qualified and testified at trial or in deposition as a computer forensic or electronic discovery expert on more than 70 occasions.

5. I have been asked by Intel Corporation ("Intel") to review and analyze Advanced Micro Devices, Inc.'s ("AMD's") electronic document retention program and its production in the instant matter. Specifically, I have been asked to investigate retention lapses previously disclosed by AMD as well as apparent anomalies in AMD's document production and opine about the sufficiency of (1) the design and implementation of AMD's document retention program; (2) AMD's harvesting and production practices; and (3) whether any lapses or inadequacies in that program may have resulted in the loss or non-production of data. I have also

been asked to opine about whether the information AMD has provided to date is sufficient to fairly assess these issues, and whether additional information is required to reach final conclusions. My work for Intel in this litigation is strictly limited to those issues disclosed above.

6. I have personal knowledge of the facts stated in this Declaration and am able to testify to everything contained within it under oath. I have read and signed the Protective Order entered in this matter and have complied with the terms of that Order.

7. In connection with my engagement, I was provided access to the production database containing all documents produced to Intel by AMD during the discovery period. This data was housed in Electronic Evidence Discovery, Inc.'s ("EED") review tool, Discovery Partner ("DP"). The DP tool allowed me to see documents produced by AMD and metadata fields associated with those documents.

8. In my opinion, and based on the information currently available, there appear to have been lapses in AMD's document preservation program. As a result of those lapses, my preliminary investigation indicates that some relevant data that should have been preserved and produced may have been permanently lost, or, at a minimum, not preserved, collected, or produced by AMD to date.

9. I have identified deficiencies and lapses in AMD's preservation program affecting numerous custodians and an unknown amount of data. There are deficiencies and lapses at nearly every stage of AMD's document retention, collection and production process. I will attempt to identify and describe representative problems in terms of testing and verification, as well as offer my preliminary conclusions. Where possible, I will also attempt to identify the

custodians affected and/or the amount of data that may have been lost, although in many instances, the data and information currently available is insufficient to allow full investigation.

10. My opinions are preliminary in nature, and I intend to continue to investigate and test the conclusions described herein as additional information becomes available, and reserve the right to revise my opinions in light of such information. Nevertheless, based on my work to date, these lapses fully merit further investigation and analysis as they may be indicative of data loss and/or non-production on AMD's part. In my opinion, however, a fair and complete investigation cannot be conducted without receipt of primary documents and sworn testimony from witnesses competent to address the inquiries in Intel's formal discovery requests.

A. Deleted-Items Production From Top AMD Executives

11. AMD pulled from circulation the oldest full backups of every Exchange or file server utilized by employees who might have relevant information on March 11, 2005. [Ex. 1 at 1] Thus, AMD was aware of its retention obligations in connection with its anticipated lawsuit against Intel no later than that date.

12. It is my understanding that AMD did not, however, institute any technology-based, automated means for preserving custodian data until November 2, 2005 when it initialized its journaling tool.[1] Based on the information provided by AMD, for nearly eight months all of AMD's custodians were able to permanently delete their email, either purposely or inadvertently. [redacted] Because the custodians themselves

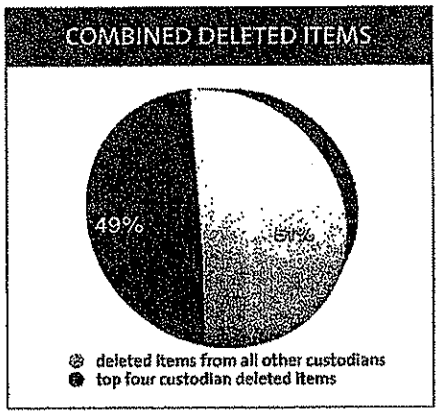
[1] [redacted]

selected which email to preserve and which email to delete during this time, I will refer to the period from March 11, 2005 to November 2, 2005 as the "Self-Select Period."

13. I analyzed the Filename/Origin in DP of AMD custodians' email sets and focused on emails that had been produced from custodians' "deleted items" folders. The fact that emails sent during the Self-Select Period existed in custodians' "deleted items" folders confirmed that those custodians were not complying with AMD's hold notice protocol during the Self-Select Period, but were instead deleting items that should have been retained in a specified folder. My analysis to date shows that AMD has produced more than 53,000 such items from "deleted items" folders during the Self-Select Period. This represents more than seven percent of all "sent" emails produced by AMD within the Self-Select Period.

14. Focusing on these "deleted" items, I performed additional testing and learned that 96% were produced from only 20 of AMD's 147 custodians. More surprisingly, I also determined that 49% of these deleted items are attributable to just four senior AMD executives:

[redacted]

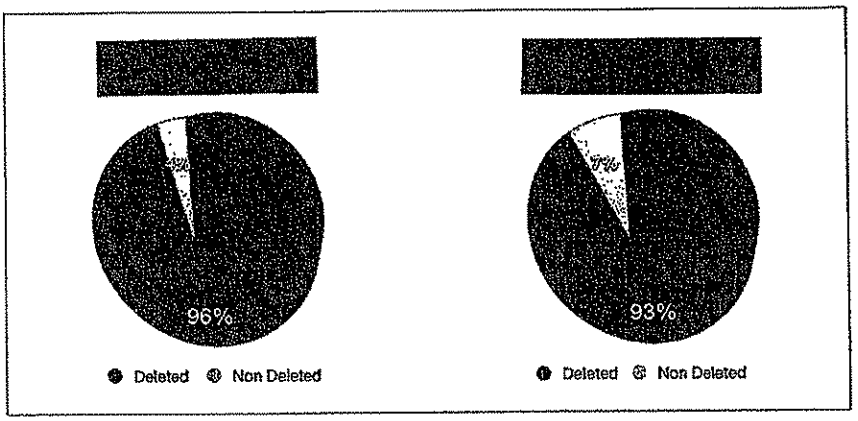


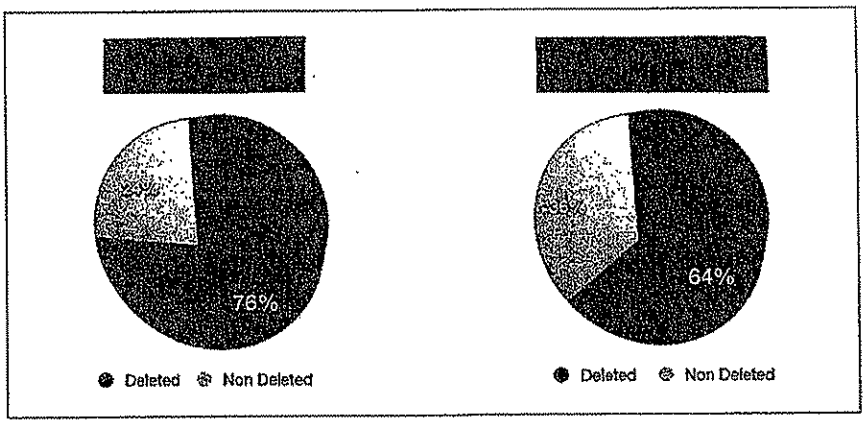
15. The evidence indicates that substantial amounts of relevant emails sent or received by these high-level executives were deleted during a time period when AMD was aware of its retention obligations and when these high-level executives had been instructed to preserve all relevant emails in a designated folder. According to a chart provided by AMD, [redacted] [Ex. 2]

16. In my opinion there are serious questions about whether AMD globally harvested deleted items for all custodians from all data sources, and whether AMD produced or even preserved such data. These questions arise in part from the fact that just 20 out of 147 custodians account for 96% of all deleted email during the Self-Select Period.

17. Based on my experience and the available information, it appears AMD engaged in undisclosed and selective remediation activity for certain custodians, resulting in the production of previously deleted items. However, it also appears that AMD did not engage in the same remediation project for the great majority of its custodians. In my opinion, if AMD did not undertake the production of deleted items across all custodians from all data sources, further discovery is necessary to reach a conclusion as to the potential scope of the problems associated with AMD's partial and undisclosed remediation, and the possible concomitant loss or non-production of relevant data.

18. I also discovered that the overwhelming majority of all emails produced for Messrs. [redacted] from the Self-Select Period were initially deleted before they were produced. These percentages were, respectively, 96%, 93%, 76%, and 64%. The following charts reflect a statistical analysis of the deleted items issues with regard to these four key AMD employees during this March 11, 2005 – November 2, 2005 Self-Select Period.





19. Thus, in the case of Mr. [redacted], 96% of all documents produced from his email during the Self-Select Period were produced from his "deleted items" folder.

20. It thus appears that some of AMD's most senior executives failed to comply with the retention instructions they had received. Although some of these emails were subsequently located and produced, each of those custodians, and, moreover, all of AMD's custodians, had the ability to permanently delete their email during the Self-Select Period. If individuals did permanently delete email, it may be beyond the reach of any subsequent remediation. There are

Mr. [redacted] to a third party during the Self-Select Period were found within a third party production and within the files of another AMD custodian, but not within the custodial files of Mr. [redacted] himself. Moreover, as described in the next section, it appears that certain files from Mr. [redacted] production, including Microsoft email personal storage files ("PSTs"), in fact had been "permanently" deleted and had to be recovered using specialized forensic software utilities.

21. Testimony and/or source documents from AMD are essential to establish whether additional deleted emails from other AMD custodians were not produced.

B. Forensic Recovery

22. By analyzing the file-path origin of the documents produced by AMD, I am able to see file folders from certain custodian hard drives entitled "Lost Files." Based on my experience, I have come to the preliminary conclusion that these folders were created using a specialized forensic software utility, EnCase, to recover files the user attempted to permanently delete. The "Lost Files" folder appears in the productions of only four custodians – none of whom was identified by AMD as having suffered data loss: [redacted][2]

23. Locally-stored PST files of two of these custodians, [redacted] (AMD's [redacted] Manager), were deleted from their hard drives. A significant number of the forensically-recovered emails from Mr. [redacted] hard drive are not found anywhere else in AMD's production. At this point I do not have sufficient information to determine when these deletions occurred but I do know that, in the case of Mr. [redacted], it was on or after December 15, 2005 (the date of the most recent email restored from his PST). I am able to conclude that in the

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[2] In the case of Messrs. [redacted], the issue appears confined to stand-alone user files as opposed to emails.

case of Mr. [redacted], the email produced from his forensically recovered hard drive PST file contains:

A. Emails that are not found anywhere else in AMD's production;

B. Emails that are found elsewhere in his production (leading me to conclude that de-duplication or near de-duplication/thread suppression were either not applied or were improperly applied);

C. Emails that post-date what has been represented as the effective date of Mr. [redacted] migration to the journaling system; and

D. Emails that post-date what has been represented as Mr. [redacted] custodial harvest date.

24. This pattern of production is unusual. AMD did reveal in its August 10, 2007 letter (in response to Intel's identification to AMD of certain apparent anomalies in its production)[3] that it had located PST files for Mr. [redacted] which we now know the user attempted to permanently delete. Those PST files included relevant messages sent as late as December 15, 2005, more than nine months after AMD was aware of its retention obligations.

25. In my opinion, AMD has, to date, provided insufficient information to understand the scope and extent of this issue. I cannot offer a final conclusion absent additional sworn testimony and documentation from AMD.

C. Failed Preservation of Sent Items

26. AMD has disclosed that at least one of its custodians, [redacted], its Vice President, [redacted], failed to disable auto-delete on his "sent

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[3] Ex. 3 at 1; Ex. 4 at 3.

items" folder during the Self-Select Period, in direct violation of the hold-notice instructions provided to him. [Ex. 5 at 7] It is my understanding (an understanding based on the incomplete information provided by AMD) that because journaling had not been implemented at this time, those emails were permanently deleted from Mr. [redacted] custodial files. However, AMD contends that Mr. [redacted] "copied himself on relevant 'sent' items and preserved those emails." [*Id.*]

27. In my opinion AMD's incomplete disclosure raises two issues. First, it indicates that there is a significant, unexplained deficiency in AMD's litigation hold procedures and its auditing of those procedures. AMD failed to disclose the problems with Mr. [redacted] preservation until years after the problem occurred, and only after repeated inquires from Intel. In my opinion, AMD's disclosure regarding Mr. [redacted] may be suggestive of a broader systemic retention failure. I believe the issue merits further investigation requiring additional information from AMD. Second, AMD's representation that no data was lost because Mr. [redacted] copied himself on all relevant sent items cannot be confirmed until receipt of Mr. [redacted] production. Determining whether Mr. [redacted] lapse is an isolated incident will require further information through formal discovery on the issue.

28. Throughout my investigation I have noted instances of sent emails being absent from the sender's production and only appearing in one or more recipients' productions. I have seen such an anomaly in the case of AMD's [redacted]. AMD has produced as relevant only 145 unique emails sent by Mr. [redacted] during the Self-Select Period. This amounts to an average of less than one per business day. Moreover, there are some unusual patterns in the chronological distribution of these sent emails. There were three two-week gaps (one each in

July, August, and September 2005) during which no relevant sent emails exist in Mr. [redacted] production.

29. Notably, there is only one sent email from Mr. [redacted] production for the entire month of October 2005 (the month preceding AMD's implementation of its journaling solution). However, when I look for sent email across the entire produced custodian population for the month of October 2005, I find 61 unique relevant emails sent by Mr. [redacted] and produced from the files of other AMD custodians. I am aware that AMD has referred to its near de-duplication protocol to explain this type of discrepancy in the past. My analysis indicates this explanation is inadequate.

30. For example, after October 2005, when journaling had been implemented for Mr. [redacted], the number of sent emails in his production jumps dramatically from just one email in October to 69 in November 2005. Indeed, there were seven sent emails produced from Mr. [redacted] custodial files during his very first day on journaling. Thereafter, there is an average of approximately 85 sent emails per month produced from the custodial files of Mr. [redacted]. Attached is a histogram showing the inconsistency between Mr. [redacted] pre- and post-hold notice and journaling behavior with regard to preservation of his sent items. [Ex. 6]

31. I have also seen AMD emails stating that any emails permanently deleted during the Self-Select Period were only available for restoration by the custodian for a period of seven days, after which they were emptied from AMD's Exchange Server "dumpster." Therefore, any such emails would not have been captured on the monthly backup tapes, except those permanently deleted within seven days of the monthly backup. [Ex. 7]

32. In my opinion it is highly unlikely that the radical inconsistency between the number of sent emails produced for Mr. [redacted] before and after he received his hold notice, and

before and after his email was journaled, can be explained by random fluctuations in email usage, near de-duplication, or subjective reviewer decisions. Rather, the anomalies are consistent with serious retention failures for Mr. [redacted] during the Self-Select Period. I am also concerned that this may be indicative of larger systemic issues. I cannot form a conclusion on this issue without further information from AMD.

D. Contradictory Instructions Within AMD's Legal Hold Notice

[redacted] [Ex. 8] [redacted]

[redacted]

36. [redacted]

E. Issues Related to Symantec Enterprise Vault

37. Beginning around November 2, 2005, AMD undertook the manual process of migrating custodian email into a tool called Symantec Enterprise Vault ("Vault"). If configured and used appropriately, the Vault should prevent the loss of emails. The correspondence I have reviewed indicates what I view as another significant and systemic failure in AMD's retention program. [redacted] [Ex. 9] [redacted] [Ex. 10] [redacted] [Ex. 11] This means that custodians could, and in all likelihood did, delete email messages that would then not have been migrated to the Vault.

38. Based on the protocol as I currently understand it, it is highly unlikely that AMD achieved a sound result in its attempt to deploy an automated preservation program that required

manual and unmonitored processes. Without additional technical information from AMD (such as migration logs), I cannot reach a definite conclusion as to the scope of data potentially lost due to this apparent failure. However, as described above, there is reason to believe that significant and systemic lapses in process, chain of custody and verification of the Vault system occurred due to the lack of clarity and insufficiency of AMD's protocol, and its validation process.

39. I have also seen correspondence [redacted] [Ex. 12] This may have increased the likelihood of data being permanently lost. I would need additional information to determine whether [redacted]

40. Based on the information currently available, it appears that there were errors in the migration of at least 15 custodians' PSTs into the Vault, including high-ranking officials like AMD's [redacted]. Metadata from the following custodians documents indicates migration failures:

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	

41. The metadata for these custodians' PST files indicates migration error. Their custodial files contained a PST folder indicating migration failure (specifically, the phrases "Migration Failure" or "Migration Fail"). It is possible that some amount of data was lost as a result of these migration errors and that the custodial production for these custodians is not

complete. For example, if the custodian had followed the AMD IT directive and permanently deleted an unsuccessfully migrated PST file, data might be irretrievably lost.

42. Beyond preserving the pre-existing PST files selected by custodians for migration, the Vault also functions as long-term storage for email. Based upon the information I have reviewed, it appears that AMD's email system was configured to automatically migrate user emails to the Vault once they became older than 30 days. During this 30 day period, users continued to have the ability to place items in the "deleted items" folder. [redacted] [Ex. 13] This would mean that these items may be recoverable by restoring monthly backup tapes, or perhaps from AMD's journaling servers. I am unable to determine whether and to what extent AMD has undertaken these processes, absent further documents or testimony.

43. It is my understanding that the parties are required to maintain pathing information for produced items. The folder naming conventions employed by AMD are unclear and indecipherable, thereby rendering it impossible to determine, in many cases, the actual sources of a given email.

44. In order to completely understand the data sources relied upon for the collection and production of information, I need to understand these artifacts. Without understanding the file path naming conventions, I cannot assess the completeness of AMD's production.

45. In my opinion, based on the limited information available and as described above, there is reason to believe that the PST migration process designed and implemented by AMD

may constitute a systemic failure. Further testimony and documents are necessary for my review before I can reach any final conclusion.

F. Corrupt PST Recovery

46. In the course of my review I learned that AMD claims to have experienced no "systemic" failures in their preservation and production efforts. [Ex. 14 at 2-3] However, AMD has acknowledged certain retention lapses in letters to Intel. In August 2007, for example, AMD acknowledged that its production of custodial files for "a small number of custodians" was found to be incomplete. They blamed this data loss on either corrupt PST files requiring subsequent repairs or certain PST files that were "apparently not located during the initial harvest of the custodian's data." [Ex. 3 at 1]

47. In reviewing the AMD production database, I identified evidence of corrupt PSTs for 36 custodians. In order for data to be produced from a corrupt PST folder, it is necessary to utilize a tool in order to repair the corruption error. Use of such a tool entails a high likelihood of data loss during the repair process.

48. I identified these corrupted folders by searching for a folder structure containing the words "lost" and "found," indicating the likelihood that data was produced from a corrupt PST container. While AMD admits to restoring and producing data from recovered PSTs [*Id.*], I am unaware of any correspondence identifying the custodians involved or the tool used for data recovery purposes. Furthermore, a question looms as to when the corruption occurred. If corruption occurred during the harvest process, best practices would require AMD to re-harvest the corrupt PST file in the first instance. Only if these re-collections were also corrupt should a recovery tool be run, since the likelihood of data loss is increased. Analyzing the scope of this problem would require additional information from AMD as to the identities of the custodians,

whether non-corrupt versions of these PSTs still exist, and the recovery method employed in collection and repair.

49. The custodians affected include some of AMD's most senior executives, among them AMD's [redacted] The full list is as follows:

[redacted]			

G. Additional Systemic Issues

50. In light of the numerous issues described above, it would be standard practice for AMD to turn to backup tapes to restore data that may have been lost. I would expect that significant data is stored on AMD backup tapes, and this data should be included in order to provide a complete production. Due to the indecipherable file pathing information, I am unable to determine the extent to which AMD has even utilized backup tapes in its production, and therefore unable to opine on the scope of relevant data that would be produced from them. In

order to determine whether AMD has provided all available relevant information, I will require further documents and testimony from AMD.

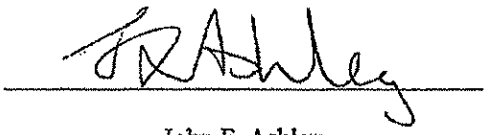
51. Furthermore, AMD in the past has referred to its de-duplication regime to explain apparent anomalies in its productions, such as emails in which a custodian was a sender or recipient, yet the email in question did not appear in such custodian's production. In my opinion, AMD's representations regarding their de-duplication methodology are confusing and inaccurate. AMD claims that their near de-duplication technology, augmented by manual review, results in production of only the final thread of an email. [Ex. 15] But in my preliminary review I have also found numerous instances of exact duplicates within single-custodian productions. These inconsistencies lead me to question whether either the standard de-duplication protocol or the near-deduplication protocol were performed correctly or in compliance with the e-discovery protocol. [Ex. 16 ¶ 4] I would require additional detail in order to opine on this issue, which may have implications in my ability to render an opinion on many of the other issues described above.

H. Conclusion and Recommendations

52. I have identified a series of preservation, harvesting, processing, and production lapses in the preceding paragraphs. I understand that AMD claims it has provided all of the information regarding its preservation regime to which Intel is entitled, pointing specifically to correspondence and attorney-drafted summaries provided to Intel ("AMD's Backup Tapes Retention Protocols" and "Summary of AMD's Document Collection Protocols"). But those materials do not address—let alone explain or resolve—any of the lapses described above. It is my strong opinion that additional documents and testimony by informed witnesses are critical not only to explain how the anomalies occurred, but to determine whether additional relevant documents remain available, but unproduced by AMD.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July __, 2008

Date: July 1, 2008



John F. Ashley

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

CERTIFICATE OF SERVICE

I, W. Harding Drane, Jr., hereby certify that on July 2, 2008 the attached document was hand delivered to the following persons and was electronically filed with the Clerk of the Court using CM/ECF which will send notification of such filing(s) to the following and the document is available for viewing and downloading from CM/ECF:

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Dated: July 2, 2008

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